

## **REMARKS**

Favorable reconsideration is respectfully requested.

The claims are 13 to 26.

The above amendment is responsive to points set forth in the Official Action.

In this regard, in main claim 13, the gloss level has been specified based on page 3, lines 3 to 4 of the present specification.

Further, typographical errors have been corrected in the claims.

With regard to the objection to claim 22, the claim has been corrected along the lines suggested by the Examiner.

With regard to the rejections on prior art, comments now follow.

### **General comments**

The Official Action has implicitly acknowledged that main claim 13 (and thus claims 14 to 26 that depend from it) are novel over the cited references. Nevertheless, applicants have added a feature to independent claim 13 to clarify that the invention relates to semi gloss powders (this is as defined numerically as a "*gloss level between about 10 and 70 as measured at a geometry of 60° according to the ASTM D523 standard*"). See page 2, line 22 to page 3, line 5 of the present specification.

To establish non-obviousness, the rejection continues to pick features from multiple documents from the general field of thermosetting powders without providing credible motives why these specific cited references would have been combined by a person skilled in the art. The rejection does not seem to be following the guidance on how to apply teaching, motivation suggestion (TSM) given by the Supreme Court in KSR International v. Teleflex, 82 USPQ 2<sup>nd</sup> 1385 (2007). In fact, there are many reasons why the cited documents would not have been combined as their detailed disclosures are incompatible or unrelated (other than they fall in the very general field of thermosetting powders).

In many cases the rejection has clearly cherry picked combinations of features out of context to arrive at the present invention. This approach uses impermissible hindsight to make arbitrary selections from the prior art. It is considered that the correct test is to read the whole of

a document in context as it would have been read by a skilled person at the priority date with no advance knowledge of the invention. This provides a fairer test of what a document teaches.

Claims 13 to 21, 23 and 26 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Moens (U.S. 5,397,641) in view of Kaplan (U.S. 5,872,192, newly cited) and Barkac (U.S. 6,191,225, newly cited).

This rejection is respectfully traversed.

**Non-obviousness of claims 13 to 21, 23 and 26 with respect to U.S. 5,397,641 (Moens) combined with U.S. 5,872,192 (Kaplan) and U.S. 6,191,255 (Barkac)**

**Why start with '641 Moens?**

A person who wishes to make the semi-gloss (i.e. gloss of 10 to 70% at 60°) powder coatings of the present invention would not start with this document.

As previously argued, '641 Moens addresses a different problem of replacing toxic TGIC with other cross-linkers while maintaining the surface characteristics of the powder coating and improving their mechanical properties (see col. 2, lines 1 to 7 and lines 50 to 53). When describing the prior art, Moens notes with approval that the coatings of the prior art while having inferior mechanical properties '*have improved surface characteristics, notably a smooth glossy surface*' (see col. 2, lines 36-37).

The coatings described in Moens are high gloss coatings (see for example Table III of '641 Moens where all 14 exemplified coatings tested have gloss values ranging from 87 to 92% at 60°). Moens states high gloss is a desirable feature:

*The results in Table III show that only the thermosetting powder compositions prepared according to the invention give coatings with high gloss excellent mechanical properties and at the same time good weatherability. (See col. 13, lines 35 to 39).*

Thus it is clear that Moens describes high gloss coatings. A person trying to make semi-gloss powders would be actively deterred from using this document as a starting point. As there is no suggestion in Moens that lower gloss coatings may be desirable, even if a reader did refer to Moens, there would be no motive for a reader to modify the Moens coatings to lower their gloss.

The rejection asserts (without further evidence), that the manipulation of gloss is obvious

of one of ordinary skill. But even if the rejection is correct, appreciation of a problem (that lower gloss may be desirable) and knowing how to achieve it are two separate issues.

In the unlikely event that a reader of Moens decided to ignore the teaching therein that high gloss is desirable, and wished to prepare semi-gloss coatings, Moens does not suggest how the high gloss coatings described therein might be modified to achieve this. A reader of Moens would not be able to arrive at the present invention without ignoring the teaching therein and even then would need further inventive effort.

Why would a reader of '641 Moens cross-reference Barkac?

The rejection has provided no motivation (without impermissible hindsight) that a person reading '641 Moens would cross-reference Barkac. The art-skilled person would not refer to Barkac to achieve semi-gloss.

Barkac is not concerned with modifying gloss. In fact the coatings of Barkac are intended for automotive applications where high gloss is desired (see col. 1, lines 45 to 49 and col. 17, lines 64 to 66). A reader of Moens wishing to produce semi-gloss coatings would be deterred from reading Barkac (or importing features therefrom) as Barkac describes high gloss coatings.

In fact Barkac is concerned with the control of polymerization of carboxy and epoxy functional powders using a living ATRP process rather than the prior art radical polymerization methods. Barkac polymers are stated to have a narrower molecular weight distribution than conventional polymers. So Barkac does not relate to the same problem addressed by '641 Moens (replacing TGIC cross-linker). There is no objective reason contained in either document to combine them.

But even if this is not the case, the combined teaching would reinforce the reader to produce high gloss coatings rather than the semi gloss coatings of the present invention.

What does Barkac reasonably teach?

Even if the previous arguments are not accepted, the combination of Moens with Barkac does not fairly arrive at the present invention since the rejection is unreasonably extrapolating the teaching of Barkac.

The rejection asserts that because Barkac teaches thermosetting powders with certain

carboxy functional polyesters that may be crystalline or amorphous, this is a general teaching that any polyester with these different morphologies must be functional equivalents. Yet a two line statement in a 13 page document that two different morphologies may be made by a new polymerization process hardly supports a general contention that all crystalline and amorphous carboxy functional polyesters are interchangeable or equivalent in all formulations for all uses!

Even in the unlikely event that Moens and Barkac were combined, why would a reader of Barkac modify the Moens powders by replacing the crystalline polyesters of Moens with amorphous ones? There are very many features described generically in Barkac any of which might in theory be chosen to modify the powders of Moens. In the absence of any suggestion in either document, what motive is there to chose to modify the polyester morphology of Moens from the hundreds of other possibilities taught in Barkac? Indeed, since both Barkac and Moens are concerned with high gloss coatings, a reader of Moens would actually be deterred from using polymers made by the Barkac process if he wanted to produce semi-gloss coatings.

To arrive at the present invention from Moens and Barkac a skilled person seeking to make semi-gloss coatings would have to select and combine two references describing high gloss powder coatings but addressing unrelated problems. He would have to assume that merely because a certain carboxy functional polyesters are stated to be either amorphous and crystalline in Barkac, such polyesters could be interchanged for all uses. He would select this feature of interest out of very many others disclosed in Barkac.

He would have to decide in the absence of any specific suggestion that it was advantageous to use an amorphous polyester to prepare the coatings of Moens. He would have to assume that this would result in semi-gloss coatings despite every expectation given the teaching of both documents that such a composition would have high gloss.

#### Why would a reader of '641 Moens cross-reference Kaplan?

For similar reasons a skilled reader of Moens would not cross-reference Kaplan which is also concerned with high gloss coatings (see Table 4, col. 10, where the gloss at 60° for Examples 7 to 10 is measured at 108 or 109).

Similarly the rejection states that as Kaplan teaches that certain carboxy functional polyesters that may be semi-crystalline or amorphous this implies that these morphologies also are interchangeable. But such sweeping statements are not justified by the disclosure of Kaplan. For analogous reasons to those described above a reader of Moens would be deterred from importing features from Kaplan as he would expect that this would produce coatings of high gloss.

Claims 24 and 25 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Moens (U.S. 5,397,641), Kaplan (U.S. 5,872,192, newly cited) and Barkac (U.S. 6,191,225, newly cited) in further view of Kaplan (U.S. 6,313,234).

This rejection is also respectfully traversed.

Clearly if the above claims are non-obvious with respect to the combination of three documents, the remaining claims are also inventive with respect the additional art that the Official Action cites. However for completeness, applicants will provide some additional arguments to show that claims 24 and 25 are non-obvious.

**Non-obviousness of claims 24 to 25 with respect to U.S. 5,397,641 (Moens) combined with U.S. 5,872,192 (Kaplan) and U.S. 6,191,255 (Barkac) and also U.S. 6,313,234 (Kaplan)**

Again the rejection does not provide proper reasons to combine a further document, it seems to have cherry picked a curing agent from '234 Kaplan using hindsight. It is not enough to say '234 Kaplan teaches  $\beta$ -hydroxyalkylamides as curing agents therefore they could be used in Moens. The test is would a skilled person trying to produce semi-gloss coatings starting with Moens have cross-referenced Kaplan '234?

Moens is concerned with replacing TGIC as the cross-linking agent with an acrylic copolymer containing glycidyl groups. Moens teaches that the TGIC can be successfully replaced '*on condition that the polyester has the following essential characteristics*' (see col. 2, lines 54 to 56) and '*its composition is very specific*' (col. 2, line 65). Moens also states '*among these polyesters, only those which have the required content of terephthalic acid and of 1,4-cyclohexanedicarboxylic acid are suitable for the purposes of the present invention*' (see col. 3, lines 39 to 41). Moens provides for the possibility that the polyesters may be branched (see col. 5, lines 10).

Kaplan '234 is concerned with curing agents designed for different systems for carboxy

functional linear polyester resins containing no more than 10 mol% of acid as IPA. Branched polyesters are disapproved of (see col. 2, lines 5 to 9). Kaplan '234 also uses TGIC as a particularly preferred epoxy compound (see col. 2, lines 61 to 62). So the specific powder compositions in Moens and Kaplan '234 are very different.

Contrary to the assertion of the rejection, mixing things taught for the same purpose is not necessarily obvious. A curing system designed for one system (containing TGIC as in Kaplan '234) cannot be assumed to work in a system without TGIC. Moens teaches that satisfactory coating properties can only be achieved without TGIC when the formulation is prepared within very specific limits.

There is no motive in Moens to use curing agents designed for a different system and every incentive in Moens not to do so. A reader of Moens concerned with removing TGIC would be deterred from cross-referencing a document that recommended using TGIC as a preferred element and which is designed for use with other carboxy functional polyesters that Moens does not claim. A reader of Moens is strongly discouraged to assume that curing agents used in combination with TGIC could be usefully added to a TGIC-free formulation.

Claim 22 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Moens, Kaplan '192 and Barkac in further view of Hoebeke (U.S. 5,525,370).

Claim 22 is also rejected under 35 U.S.C. 103(a) as being unpatentable over Moens, Kaplan '192 and Barkac in further view of Knoops (WO 02055620).

These rejections are also respectfully traversed.

**Non-obviousness of claim 22 with respect to U.S. 5,397,641 (Moens) combined with U.S. 5,872,192 (Kaplan) and U.S. 6,191,255 (Barkac) and also U.S. 5,525,370 (Hoebeke) or WO 02/055620 (Moens - not Knoops)**

The feature of a glycidyl acrylate polymer with  $M_n > 10,000$  has been imported from Hoebeke or from '620 Moens without proper reasons as to why either of these references would have been combined with the previous three.

U.S. 5,525,370 (Hoebeke)

As previously pointed out, a reader of '641 Moens would not refer to Hoebeke as it

describes matte coatings. It is irrelevant that Hoebeke may incidentally as a comparison disclose coatings of higher gloss. As '641 Moens describes high gloss coatings, where is the motivation or reason within '641 Moens to direct a reader to a document whose primary purpose is to provide matte coatings?

But even if the rejection is correct and '641 Moens (with Barkac or Kaplan) would be read in combination with Hoebeke this still does not lead to the present invention.

The rejection continues to cherry pick arbitrary features from the prior art using *ex post facto* analysis. In theory a skilled person reading Hoebeke could have taken any of the features disclosed in Hoebeke to modify the compositions of '641 Moens. But without advance knowledge of the present invention, what would motivate a reader of Hoebeke to select the  $M_n$  of the glycidyl acrylate as opposed to any other feature described in Hoebeke? There is no suggestion in Hoebeke that on its own use of glycidyl group containing acrylic copolymers of  $M_n$  4000 to 10,000 would produce low gloss in the formulations described in '641 Moens. Even then to arrive at the present invention a reader of Hoebeke must select a glycidyl acrylate with an  $M_n$  at the extreme top of the disclosed range (10,000) and it is even less likely that a reader of Hoebeke would chose to make this specific selection from what would be an already arbitrary choice of feature to import into Moens.

#### WO 02/055620 (Moens)

Again it is unreasonable to select features out of context. The whole disclosure of '620 Moens actually teaches away from the present invention. '620 Moens teaches that to obtain coatings of lower gloss a combination of both amorphous and semi-crystalline carboxy functional polyesters are needed. The present invention which uses amorphous polyester to achieve semi-gloss is thus surprising given the teaching of '620 Moens.

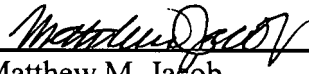
For the foregoing reasons, it is apparent that the rejections are not based on adequate reasons to combine the cited references to arrive at the present invention, are untenable and should be withdrawn.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

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